

IN THE CLAIMS

Sub B1
1. (Currently Amended) In a distributed computer network, a method of transporting data from a sending host computer system to a receiving host computer system, wherein the data is stored on a volume of information, the data being stored on a plurality of LUNs, the method comprising:

creating a point-in-time copy of a the volume, ~~the volume having the data to be transported~~;

generating a backup components document, wherein the backup components document includes location information related to the point-in-time copy data to be transported;

At3 importing the backup components document to the receiving host computer system; and

accessing the point-in-time copy ~~transported data~~ using the location information in the backup components document.

2. (Currently Amended) A method as defined in claim 1 wherein the backup components document comprises:

a self-contained description of where the point-in-time copy data resides and how the point-in-time copy data is to be restored.

3. (Currently Amended) A method as defined in claim 2 wherein the backup components document further comprises:

a description of physical resources necessary to restore and access the point-in-time copy data.

4. (Currently Amended) A method as defined in claim 1, wherein the volume is one of a plurality of volumes stored on a plurality of logical unit numbers (LUNs), the method further comprising:

identifying a the plurality set of ~~original~~ volumes to be copied and transported, ~~the set comprising two or more volumes of data~~;

wherein the creating act comprises creating a point-in-time copy of the plurality set of volumes;

importing the point-in-time copy of the plurality set of volumes onto the receiving host computer system; and

reconstructing ~~set~~ information relating to mapping information ~~from the original~~ associated with the plurality of volumes ~~of~~ to the point-in-time copy of the plurality of volumes ~~from the receiving host computer system~~.

5. (Currently Amended) A method as defined in claim 4 further comprising:

following the act of identifying a the plurality set of original volumes to be copied and transported and prior to the act of creating the point-in-time copy of the plurality of volumes, determining the plurality of LUNs that compose the plurality of volumes;

polling a plurality of providers in the network environment to determine whether the plurality of LUNs that compose the plurality of volumes are supported;

determining one provider that supports the plurality of LUNs that compose the plurality of volumes to create the point-in-time copy of the plurality of volumes; and

instructing the provider that supports the plurality of LUNs that compose the plurality of volumes to create the point-in-time copy of the plurality of volumes.

6. (Currently Amended) A method as defined in claim 1 wherein the ~~data to be transferred transported comprises a volume of data and wherein the volume of data is stored on~~ at least a portion of one or more LUNs, the method further comprising:

marking portions of the ~~original~~ one or more LUNs to identify the portions as being associated with the volume to be transported;

creating a point-in-time copy of each of the one or more LUNs having a portion of the volume to be transported;

evaluating the marked portions of the point-in-time ~~copy~~ copies of the one or more LUNs; and

based on the evaluation act, hiding portions of the point-in-time copies of the one or more LUNs not associated with the volume ~~to be transported~~.

7. (Currently Amended) A method as defined in claim 6 wherein the act of marking portions of the one or more LUNs to identify the portions as being associated with the volume to be transported marks the portions of the ~~original~~ one or more LUNs as hidden ~~and~~ or read-only and wherein, based on the evaluation act, only the portions of the point-in-time ~~copy~~ copies of the one or more LUNs associated with the volumes to be transported are unhidden.

A3 8. (Currently Amended) A method as defined in claim 6 wherein the act of marking portions of the one or more LUNs to identify the portions as being associated with the volume to be transported marks all volumes on the one or more LUNs being transported as hidden ~~and~~ or read only and based on the evaluation act, only the portions of the point-in-time copies of the one or more LUNs associated with the volumes to be transported are unhidden.

9. (Currently Amended) A method as defined in claim 1 wherein the ~~data to be transferred comprises a volume of data and wherein the volume of data~~ is stored on at least a portion of one or more LUNs, the method further comprising:
storing the original state of portions of the one or more LUNs to be copied;
opening a volume handle to allow marking of the volume;
marking portions of the ~~original~~ one or more LUNs to identify the portions as being associated with the volume to be transported;
creating the point-in-time copy of each of the one or more LUNs having a portion of the volume to be transported;
closing the volume handle; and
restoring the volume to its original state.

10. (Original) A method as defined in claim 9 wherein the act of closing the volume handle is caused by a system crash.

11. (Currently Amended) A method as defined in claim 9 wherein the backup components document comprises an XML document.

12. (Currently Amended) A method as defined in claim 1 wherein the act of creating the point-in-time copy of the volume comprises creating ~~the~~ a point-in-time copy of ~~each~~ one or

more LUNs that have stored thereon having a portion of the volume to transported; and wherein the method of transporting data further comprises:

identifying each of the point-in-time copies of the one or more LUNs ~~copies~~;
requesting information relating to each of the point-in-time copies of the one or more LUNs ~~copies~~; and
receiving identifying information related to each of the point-in-time copies of the one or more LUNs ~~copies~~, wherein the identifying information is stored in the backup components document.

A3 13. (Currently Amended) A method as defined in claim 12 wherein a hardware provider creates the point-in-time copies of the one or more LUNs ~~copies~~ and provides the identifying information.

~~14~~ 14. (Currently Amended) A method as defined in claim [[14]] 1 wherein the backup components document comprises an XML document.

~~15~~ 15. (Currently Amended) A method as defined in claim 1 wherein the act of creating the point-in-time copy of the volume comprises creating a point-in-time copy of each one or more LUNs that have stored thereon having a portion of the volume to transported; and wherein the act of accessing the point-in-time copy ~~transported data~~ using information in the backup components document further comprises:

~~for each LUNs copy~~, identifying the a provider that created at least one of the LUN point-in-time copies of the one or more LUNs ~~copy~~;

~~in response to locating one of the providers that created the point-in-time copy~~, requesting that the provider make all point-in-time copies created by the provider LUN ~~copies~~ visible;

locating the point-in-time copies made visible by the provider ~~LUNs~~;

matching the point-in-time copies made visible by the provider ~~LUNs~~ to ~~identified~~ LUNs identified in the backup components document; and

upon matching the point-in-time copies made visible by the provider ~~LUNs~~ with identified LUNs, importing the matched, visible point-in-time copies to the receiving host computer system ~~LUNs~~.

1716. (Currently Amended) A method as defined in claim 1615 wherein the act of ~~requesting that the LUN copy be made visible~~ importing the matched, visible point-in-time copies comprises placing the matched, visible point-in-time copies ~~LUN copy~~ in the same zone as the receiving host computer system and unmasking the matched, visible point-in-time copies ~~LUN copy~~.

1817. (Currently Amended) A method as defined in claim 1715 wherein the accessing acts of identifying, requesting, locating, matching and importing are ~~LUNs copy be made visible~~ is repeated for each point-in-time copy of the one or more LUNs ~~copy identified in the backup components document~~.

1918. (Currently Amended) A method as defined in claim 1715 wherein the act of locating the point-in-time copies made visible by the provider ~~LUNs~~ comprises performing a SCSI rescan of the providers in the distributed network system.

2019. (Currently Amended) A method as defined in claim 1715 wherein the act of matching the point-in-time copies made visible by the provider ~~LUNs~~ to ~~identified LUNs~~ identified in the backup components document comprises:

~~determine~~ determining ~~visible information associated with the LUNs identified in the backup components document~~ information using SCSI inquiry commands;

~~for each provider, requesting additional LUN information to determine which provider is responsible for the visible point-in-time copy of the LUN;~~

~~receive~~ receiving from the provider additional information about ~~the a first point-in-time copy made visible by the provider LUN from the provider responsible for the LUN;~~ and

~~compare~~ comparing the additional information to the ~~identified information~~ associated with the first LUNs identified in the backup components document information to determine if match the first point-in-time copy visible matches to one of the identified LUNs identified in the backup components document.

2120. (Currently Amended) A method as defined in claim 2019 further comprising:

determining whether other point-in-time copies have been made visible by the provider LUNs are visible; and

if so, repeating the matching acts of receiving and comparing for the other point in time copies in order to match the other visible point-in-time copies LUNs with identified LUNs.

2221. A method as defined in claim 2019 further comprising:

upon matching a ~~visible~~ point-in-time copy made visible by the provider of the one or more LUNs to an identified ~~determining matching~~ LUNs, ~~determine~~ determining associated volumes; and

importing the associated volumes to the receiving host computer system.

2322. (Currently Amended) A method as defined in claim 2221 further comprising:

identifying each volume imported to the host computer system;

for each imported volume, determine whether the volume should be transported using information in the backup components document; and

unhiding each volume to be transported.

2423. (Currently Amended) A method as defined in claim 1, wherein the volume is one of a plurality of volumes associated with a plurality of LUNs, wherein the act of creating the point-in-time copy of the volume further created comprising creating a point-in-time copy of a each of the plurality of volumes associated with a plurality of LUNs, and wherein the method further comprises:

requesting the deletion of one point-in-time copy of one of the plurality of volumes; and

deleting one of the point-in-time ~~copy~~ copies of one of the plurality of volumes while maintaining at least one other point-in-time copy of one of the plurality of volumes.

2524. (Currently Amended) A method as defined in claim 2423 wherein the method further comprises:

in response to the request to delete one of the point-in-time ~~copy~~ copies of one of the plurality of volumes, evaluating the ~~plurality of~~ point-in-time copy of each of the

plurality of volumes to determine which ~~copy~~ point-in-time copies of the plurality of volumes would remain following deletion of the one point-in-time copy ~~volume~~;

~~determine~~ determining which LUNs ~~used by~~ are associated with the point-in-time copy ~~volume~~ to be deleted;

for each LUN ~~used by~~ that is associated with the point-in-time copy ~~volume~~ to be deleted, ~~determine~~ determining whether the LUN is used by another point-in-time copy corresponding to another one of the plurality of volumes; and

if the LUN is not used by another point-in-time copy corresponding to another one of the plurality of volumes, freeing the LUN.

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2625. (Currently Amended) A computer program product readable by a computer and encoding instructions for executing the method recited in claim 1.

2726. (Currently Amended) A computer program product readable by a computer and encoding instructions for executing the method recited in claim 2322.

27. (Currently Amended) A computer program product readable by a computer and encoding instructions for executing the method recited in claim 2524.

28. (Currently Amended) A system for transporting data across a system area network, the system comprising:

a storage subsystem module that stores data for at least one host computer system, the data stored in ~~one or more~~ at least one LUNs[.];

a requestor module for requesting the transportation of data stored in the storage subsystem, the transportation involving the transfer of information from a first host computer system to a second host computer system, the ~~requesting~~ requestor module requesting the transportation of a volume of information stored on a at least a portion of one or more LUNs;

a point-in-time copy interface module for receiving the request and generating an instruction to create a point-in-time copy of the one or more LUNs on which the volume of information is stored, wherein the instruction comprises identification information

related to the one or more LUNs on which the volume of information is stored ~~having portions of the volume to be copied~~; and

a provider module for receiving the instruction to create a the point-in-time copy of the LUNs and ~~for creating the point-in-time copy of these LUNs~~, the provider module providing mapping information to the point-in-time copy interface, wherein the mapping information relates to a ~~relating to location information~~ for the point-in-time copy.

A3 29. (Original) A system as defined in claim 28 wherein the point-in-time copy interface further comprises:

a control module that determines which provider in the system supports the LUNs that compose the volume.

30. (Currently Amended) A system as defined in claim 28 wherein the point-in-time copy interface generates a backup components document describing the volume to be transported and wherein the system further comprises:

an importer module for importing the backup components document[[,]] and using the information in the component backup document to accesses the point-in-time copy of the volume to be transported.

31. (Original) A system as defined in claim 30 wherein the provider marks all the LUNs as read only and hidden and wherein the importer module only exposes portions of the LUNs relating to the volumes to be transported.

32. (Original) A system as defined in claim 31 wherein the act of exposing the portions of the LUNs involves un hiding the portions.